

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
14 April 2005 (14.04.2005)

PCT

(10) International Publication Number  
**WO 2005/033300 A1**

(51) International Patent Classification<sup>7</sup>: C12N 5/06,  
A01K 67/027

(21) International Application Number:  
PCT/US2004/032362

(22) International Filing Date: 1 October 2004 (01.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/507,834 1 October 2003 (01.10.2003) US

(71) Applicant (for all designated States except US):  
**CEDARS-SINAI MEDICAL CENTER [US/US];**  
8700 Beverly Boulevard, Los Angeles, CA 90048-1865  
(US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **SIERRA-HONIG-MANN, Maria del Rocio [MX/US];** 656 Camino de la Luna, Thousand Oaks, CA 91320 (US).

(74) Agents: **LEVY, Seth, D. et al.; Davis Wright Tremaine LLP, 865 Figueroa Street, Suite 2400, Los Angeles, CA 90017-2566 (US).**

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A1

WO 2005/033300

(54) Title: SYSTEM AND METHOD FOR XENOBIOTIC CELL AND TISSUE CULTURE SUPPORTED BY SURROGATE AVIAN VASCULAR CIRCULATION

(57) Abstract: The invention relates to the use of *ex ovo* embryonic eggs to support the growth and/or culturing of biological materials. In various embodiments, the biological materials may be, for example, organs or fragments of organs, tissues or tissue sections, cell suspensions or physical three-dimensional matrices containing embedded live cells. The use of *ex ovo* embryonic eggs may be particularly advantageous in providing vasculature to xenografts in the relative absence of immunological concerns, as the embryo is immune-incompetent. The invention additionally provides methods for addressing potential xenograft rejection by a transplant recipient, by including an inducible apoptotic gene in the animal from which the egg is obtained and thereafter inducing the gene to eliminate avian cells that develop in the cultured biological material.